

US EPA ARCHIVE DOCUMENT

ANALYTICAL RESULTS

Prepared for:

Chevron
5000 State Route 128
HOOVEN OH 45033

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

December 03, 2009

Project: Hooven Cincinnati Final Remedy

Samples arrived at the laboratory on Wednesday, November 18, 2009. The PO# for this group is 0015039270 and the release number is 50008931. The group number for this submittal is 1171654.

<u>Client Sample Description</u>	<u>Lancaster Labs (LLI) #</u>
MW-17,111209 Grab Water	5841269
MW-17,111209 Filtered Grab Water	5841270
BD-2,111209 Grab Water	5841271
BD-2,111209 Filtered Grab Water	5841272
MW-26R,111209 Grab Water	5841273
MW-26R,111209 Filtered Grab Water	5841274
MW-48S,111209 Grab Water	5841275
MW-48S,111209 Filtered Grab Water	5841276
MW-80,111609 Grab Water	5841277
MW-80,MS,111609 Grab Water	5841278
MW-80,MSD,111609 Grab Water	5841279
MW-80,111609 Filtered Grab Water	5841280
MW-80,MS,111609 Filt Grab Water	5841281
MW-80,MSD,111609 Filt Grab Water	5841282
MW-80,DUP,111609 Filt Grab Water	5841283
MW-64,111609 Grab Water	5841284
MW-64,111609 Filtered Grab Water	5841285
Trip Blank,111709 Water	5841286

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

ELECTRONIC Trihydro Corporation
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Attn: Trihydro Database

Attn: Tim Gunn

Attn: Matthew Mitchell

Questions? Contact your Client Services Representative
Katherine A Klinefelter at (717) 656-2300

Respectfully Submitted,



Robin C. Runkle
Senior Specialist

Sample Description: MW-17,111209 Grab Water
2nd Semi-Annual 2009-Cincinnati Final Remedy

LLI Sample # WW 5841269
LLI Group # 1171654
OH

Project Name: Hooven Cincinnati Final Remedy

Collected: 11/12/2009 10:00 by JH

Account Number: 11494

Submitted: 11/18/2009 09:00

Chevron

Reported: 12/03/2009 at 07:22

5000 State Route 128

Discard: 02/02/2010

HOOVEN OH 45033

HOO17 SDG#: HVQ32-01

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC/MS	Volatiles	SW-846 8260B	ug/l	ug/l	
07582	Benzene	71-43-2	8,000	25	50
07582	Chlorobenzene	108-90-7	N.D.	4	5
07582	Ethylbenzene	100-41-4	390	4	5
07582	Toluene	108-88-3	120	4	5
07582	Xylene (Total)	1330-20-7	300	4	5

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01163	GC/MS VOA Water Prep	SW-846 5030B	1	L093261AA	11/23/2009 01:59	Michael A Ziegler	5
01163	GC/MS VOA Water Prep	SW-846 5030B	2	L093261AA	11/23/2009 02:21	Michael A Ziegler	50
07582	PPL + Xylene (total) by 8260	SW-846 8260B	1	L093261AA	11/23/2009 01:59	Michael A Ziegler	5
07582	PPL + Xylene (total) by 8260	SW-846 8260B	1	L093261AA	11/23/2009 02:21	Michael A Ziegler	50



Analysis Report

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Sample Description: MW-17,111209 Filtered Grab Water
2nd Semi-Annual 2009-Cincinnati Final Remedy

LLI Sample # WW 5841270
LLI Group # 1171654
OH

Project Name: Hooven Cincinnati Final Remedy

Collected: 11/12/2009 10:00 by JH

Account Number: 11494

Submitted: 11/18/2009 09:00

Chevron

Reported: 12/03/2009 at 07:22

5000 State Route 128

Discard: 02/02/2010

HOOVEN OH 45033

HOF17 SDG#: HVQ32-02

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
Metals Dissolved					
07035	Arsenic	7440-38-2	mg/l 0.0625	mg/l 0.0072	1
07055	Lead	7439-92-1	N.D.	0.0069	1

General Sample Comments

This sample was field filtered for metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07035	Arsenic	SW-846 6010B	1	093241848010	12/02/2009 16:59	John P Hook	1
07055	Lead	SW-846 6010B	1	093241848010	11/30/2009 23:51	John W Yanzuk II	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	093241848010	11/23/2009 02:30	Mirit S Shenouda	1

Sample Description: BD-2,111209 Grab Water
2nd Semi-Annual 2009-Cincinnati Final Remedy

LLI Sample # WW 5841271
LLI Group # 1171654
OH

Project Name: Hooven Cincinnati Final Remedy

Collected: 11/12/2009 by JH

Account Number: 11494

Submitted: 11/18/2009 09:00

Chevron

Reported: 12/03/2009 at 07:22

5000 State Route 128

Discard: 02/02/2010

HOOVEN OH 45033

HOOD2 SDG#: HVQ32-03FD

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC/MS	Volatiles	SW-846 8260B	ug/l	ug/l	
07582	Benzene	71-43-2	8,200	25	50
07582	Chlorobenzene	108-90-7	N.D.	4	5
07582	Ethylbenzene	100-41-4	400	4	5
07582	Toluene	108-88-3	120	4	5
07582	Xylene (Total)	1330-20-7	300	4	5

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01163	GC/MS VOA Water Prep	SW-846 5030B	1	L093261AA	11/23/2009 02:42	Michael A Ziegler	5
01163	GC/MS VOA Water Prep	SW-846 5030B	2	L093261AA	11/23/2009 03:04	Michael A Ziegler	50
07582	PPL + Xylene (total) by 8260	SW-846 8260B	1	L093261AA	11/23/2009 02:42	Michael A Ziegler	5
07582	PPL + Xylene (total) by 8260	SW-846 8260B	1	L093261AA	11/23/2009 03:04	Michael A Ziegler	50



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Sample Description: BD-2,111209 Filtered Grab Water
2nd Semi-Annual 2009-Cincinnati Final Remedy

LLI Sample # WW 5841272
LLI Group # 1171654
OH

Project Name: Hooven Cincinnati Final Remedy

Collected: 11/12/2009 by JH

Account Number: 11494

Submitted: 11/18/2009 09:00

Chevron

Reported: 12/03/2009 at 07:22

5000 State Route 128

Discard: 02/02/2010

HOOVEN OH 45033

HOFD2 SDG#: HVQ32-04FD

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
Metals Dissolved					
07035	Arsenic	7440-38-2	mg/l 0.0612	mg/l 0.0072	1
07055	Lead	7439-92-1	N.D.	0.0069	1

General Sample Comments

This sample was field filtered for metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07035	Arsenic	SW-846 6010B	1	093241848010	12/02/2009 17:09	John P Hook	1
07055	Lead	SW-846 6010B	1	093241848010	11/30/2009 23:55	John W Yanzuk II	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	093241848010	11/23/2009 02:30	Mirit S Shenouda	1



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Sample Description: MW-26R,111209 Grab Water
2nd Semi-Annual 2009-Cincinnati Final Remedy

LLI Sample # WW 5841273
LLI Group # 1171654
OH

Project Name: Hooven Cincinnati Final Remedy

Collected: 11/12/2009 12:05 by JH

Account Number: 11494

Submitted: 11/18/2009 09:00

Chevron

Reported: 12/03/2009 at 07:22

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Discard: 02/02/2010

HOOVEN OH 45033

HO26R SDG#: HVQ32-05

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC/MS	Volatiles	SW-846 8260B	ug/l	ug/l	
07582	Benzene	71-43-2	N.D.	0.5	1
07582	Chlorobenzene	108-90-7	N.D.	0.8	1
07582	Ethylbenzene	100-41-4	N.D.	0.8	1
07582	Toluene	108-88-3	N.D.	0.7	1
07582	Xylene (Total)	1330-20-7	N.D.	0.8	1

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01163	GC/MS VOA Water Prep	SW-846 5030B	1	L093261AA	11/22/2009 23:04	Michael A Ziegler	1
07582	PPL + Xylene (total) by 8260	SW-846 8260B	1	L093261AA	11/22/2009 23:04	Michael A Ziegler	1



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Sample Description: MW-26R,111209 Filtered Grab Water
2nd Semi-Annual 2009-Cincinnati Final Remedy

LLI Sample # WW 5841274
LLI Group # 1171654
OH

Project Name: Hooven Cincinnati Final Remedy

Collected: 11/12/2009 12:05 by JH

Account Number: 11494

Submitted: 11/18/2009 09:00

Chevron

Reported: 12/03/2009 at 07:22

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Discard: 02/02/2010

HOOVEN OH 45033

HF26R SDG#: HVQ32-06

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
Metals Dissolved					
SW-846 6010B			mg/l	mg/l	
07035	Arsenic	7440-38-2	N.D.	0.0072	1
07055	Lead	7439-92-1	N.D.	0.0069	1

General Sample Comments

This sample was field filtered for metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07035	Arsenic	SW-846 6010B	1	093241848010	12/01/2009 00:05	John W Yanzuk II	1
07055	Lead	SW-846 6010B	1	093241848010	12/01/2009 00:05	John W Yanzuk II	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	093241848010	11/23/2009 02:30	Mirit S Shenouda	1



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Sample Description: MW-48S,111209 Grab Water
2nd Semi-Annual 2009-Cincinnati Final Remedy

LLI Sample # WW 5841275
LLI Group # 1171654
OH

Project Name: Hooven Cincinnati Final Remedy

Collected: 11/12/2009 13:15 by JH

Account Number: 11494

Submitted: 11/18/2009 09:00

Chevron

Reported: 12/03/2009 at 07:22

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Discard: 02/02/2010

HOOVEN OH 45033

HO48S SDG#: HVQ32-07

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC/MS	Volatiles	SW-846 8260B	ug/l	ug/l	
07582	Benzene	71-43-2	3 J	0.5	1
07582	Chlorobenzene	108-90-7	N.D.	0.8	1
07582	Ethylbenzene	100-41-4	20	0.8	1
07582	Toluene	108-88-3	0.8 J	0.7	1
07582	Xylene (Total)	1330-20-7	170	0.8	1

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01163	GC/MS VOA Water Prep	SW-846 5030B	1	L093261AA	11/23/2009 03:26	Michael A Ziegler	1
07582	PPL + Xylene (total) by 8260	SW-846 8260B	1	L093261AA	11/23/2009 03:26	Michael A Ziegler	1



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Sample Description: MW-48S,111209 Filtered Grab Water
2nd Semi-Annual 2009-Cincinnati Final Remedy

LLI Sample # WW 5841276
LLI Group # 1171654
OH

Project Name: Hooven Cincinnati Final Remedy

Collected: 11/12/2009 13:15 by JH

Account Number: 11494

Submitted: 11/18/2009 09:00

Chevron

Reported: 12/03/2009 at 07:22

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Discard: 02/02/2010

HOOVEN OH 45033

HF48S SDG#: HVQ32-08

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
Metals Dissolved					
07035	Arsenic	7440-38-2	mg/l 0.0257	mg/l 0.0072	1
07055	Lead	7439-92-1	N.D.	0.0069	1

General Sample Comments

This sample was field filtered for metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07035	Arsenic	SW-846 6010B	1	093241848010	12/02/2009 17:12	John P Hook	1
07055	Lead	SW-846 6010B	1	093241848010	12/01/2009 00:08	John W Yanzuk II	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	093241848010	11/23/2009 02:30	Mirit S Shenouda	1

Sample Description: MW-80,111609 Grab Water
2nd Semi-Annual 2009-Cincinnati Final Remedy

LLI Sample # WW 5841277
LLI Group # 1171654
OH

Project Name: Hooven Cincinnati Final Remedy

Collected: 11/16/2009 11:25 by JH

Account Number: 11494

Submitted: 11/18/2009 09:00

Chevron

Reported: 12/03/2009 at 07:22

5000 State Route 128

Discard: 02/02/2010

HOOVEN OH 45033

HOO80 SDG#: HVQ32-09BKG

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles	SW-846 8260B		ug/l	ug/l	
07582	Benzene	71-43-2	210	0.5	1
07582	Chlorobenzene	108-90-7	N.D.	0.8	1
07582	Ethylbenzene	100-41-4	N.D.	0.8	1
07582	Toluene	108-88-3	6	0.7	1
07582	Xylene (Total)	1330-20-7	10	0.8	1
GC Volatiles	SW-846 8015B		ug/l	ug/l	
01635	TPH-GRO water C6-C10	n.a.	2,700	20	1
GC Extractable TPH	SW-846 8015B		ug/l	ug/l	
08269	TPH-DRO water C10-C28	n.a.	5,100	310	10

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01163	GC/MS VOA Water Prep	SW-846 5030B	1	L093261AA	11/23/2009 00:10	Michael A Ziegler	1
07582	PPL + Xylene (total) by 8260	SW-846 8260B	1	L093261AA	11/23/2009 00:10	Michael A Ziegler	1
01146	GC VOA Water Prep	SW-846 5030B	2	09323A07A	11/19/2009 20:39	Martha L Seidel	1
01635	TPH-GRO water C6-C10	SW-846 8015B	1	09323A07A	11/19/2009 20:39	Martha L Seidel	1
07003	Extraction - DRO (Waters)	SW-846 3510C	1	093220020A	11/19/2009 09:15	Karen R Rettew	1
08269	TPH-DRO water C10-C28	SW-846 8015B	1	093220020A	11/21/2009 09:14	Diane V Do	10

Sample Description: MW-80,MS,111609 Grab Water
2nd Semi-Annual 2009-Cincinnati Final Remedy

LLI Sample # WW 5841278
LLI Group # 1171654
OH

Project Name: Hooven Cincinnati Final Remedy

Collected: 11/16/2009 11:25 by JH

Account Number: 11494

Submitted: 11/18/2009 09:00

Chevron

Reported: 12/03/2009 at 07:22

5000 State Route 128

Discard: 02/02/2010

HOOVEN OH 45033

HOO80 SDG#: HVQ32-09MS

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles	SW-846 8260B		ug/l	ug/l	
07582	Benzene	71-43-2	230	0.5	1
07582	Chlorobenzene	108-90-7	21	0.8	1
07582	Ethylbenzene	100-41-4	23	0.8	1
07582	Toluene	108-88-3	27	0.7	1
07582	Xylene (Total)	1330-20-7	77	0.8	1
GC Volatiles	SW-846 8015B		ug/l	ug/l	
01635	TPH-GRO water C6-C10	n.a.	3,500	20	1
GC Extractable TPH	SW-846 8015B		ug/l	ug/l	
08269	TPH-DRO water C10-C28	n.a.	6,800	310	10

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01163	GC/MS VOA Water Prep	SW-846 5030B	1	L093261AA	11/23/2009 00:31	Michael A Ziegler	1
07582	PPL + Xylene (total) by 8260	SW-846 8260B	1	L093261AA	11/23/2009 00:31	Michael A Ziegler	1
01146	GC VOA Water Prep	SW-846 5030B	1	09323A07A	11/19/2009 19:22	Martha L Seidel	1
01635	TPH-GRO water C6-C10	SW-846 8015B	1	09323A07A	11/19/2009 19:22	Martha L Seidel	1
07003	Extraction - DRO (Waters)	SW-846 3510C	1	093220020A	11/19/2009 09:15	Karen R Rettew	1
08269	TPH-DRO water C10-C28	SW-846 8015B	1	093220020A	11/21/2009 09:34	Diane V Do	10

Sample Description: MW-80,MSD,111609 Grab Water
2nd Semi-Annual 2009-Cincinnati Final Remedy

LLI Sample # WW 5841279
LLI Group # 1171654
OH

Project Name: Hooven Cincinnati Final Remedy

Collected: 11/16/2009 11:25 by JH

Account Number: 11494

Submitted: 11/18/2009 09:00

Chevron

Reported: 12/03/2009 at 07:22

5000 State Route 128

Discard: 02/02/2010

HOOVEN OH 45033

HOO80 SDG#: HVQ32-09MSD

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles	SW-846 8260B		ug/l	ug/l	
07582	Benzene	71-43-2	220	0.5	1
07582	Chlorobenzene	108-90-7	17	0.8	1
07582	Ethylbenzene	100-41-4	18	0.8	1
07582	Toluene	108-88-3	23	0.7	1
07582	Xylene (Total)	1330-20-7	65	0.8	1
GC Volatiles	SW-846 8015B		ug/l	ug/l	
01635	TPH-GRO water C6-C10	n.a.	3,300	20	1
GC Extractable TPH	SW-846 8015B		ug/l	ug/l	
08269	TPH-DRO water C10-C28	n.a.	6,800	300	10

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01163	GC/MS VOA Water Prep	SW-846 5030B	1	L093261AA	11/23/2009 00:53	Michael A Ziegler	1
07582	PPL + Xylene (total) by 8260	SW-846 8260B	1	L093261AA	11/23/2009 00:53	Michael A Ziegler	1
01146	GC VOA Water Prep	SW-846 5030B	1	09323A07A	11/19/2009 19:48	Martha L Seidel	1
01635	TPH-GRO water C6-C10	SW-846 8015B	1	09323A07A	11/19/2009 19:48	Martha L Seidel	1
07003	Extraction - DRO (Waters)	SW-846 3510C	1	093220020A	11/19/2009 09:15	Karen R Rettew	1
08269	TPH-DRO water C10-C28	SW-846 8015B	1	093220020A	11/21/2009 09:54	Diane V Do	10



Analysis Report

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Sample Description: MW-80,111609 Filtered Grab Water
2nd Semi-Annual 2009-Cincinnati Final Remedy

LLI Sample # WW 5841280
LLI Group # 1171654
OH

Project Name: Hooven Cincinnati Final Remedy

Collected: 11/16/2009 11:25 by JH

Account Number: 11494

Submitted: 11/18/2009 09:00

Chevron

Reported: 12/03/2009 at 07:22

5000 State Route 128

Discard: 02/02/2010

HOOVEN OH 45033

HOF80 SDG#: HVQ32-10BKG

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
Metals Dissolved					
07035	Arsenic	7440-38-2	mg/l 0.0451	mg/l 0.0072	1
07055	Lead	7439-92-1	N.D.	0.0069	1

General Sample Comments

This sample was field filtered for metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07035	Arsenic	SW-846 6010B	1	093241848010	12/02/2009 16:41	John P Hook	1
07055	Lead	SW-846 6010B	1	093241848010	11/30/2009 23:31	John W Yanzuk II	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	093241848010	11/23/2009 02:30	Mirit S Shenouda	1

Sample Description: MW-80,MS,111609 Filt Grab Water
2nd Semi-Annual 2009-Cincinnati Final Remedy

LLI Sample # WW 5841281
LLI Group # 1171654
OH

Project Name: Hooven Cincinnati Final Remedy

Collected: 11/16/2009 11:25 by JH

Account Number: 11494

Submitted: 11/18/2009 09:00

Chevron

Reported: 12/03/2009 at 07:22

5000 State Route 128

Discard: 02/02/2010

HOOVEN OH 45033

HOF80 SDG#: HVQ32-10MS

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
Metals Dissolved		SW-846 6010B	mg/l	mg/l	
07035	Arsenic	7440-38-2	0.198	0.0072	1
07055	Lead	7439-92-1	0.152	0.0069	1

General Sample Comments

This sample was field filtered for metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07035	Arsenic	SW-846 6010B	1	093241848010	12/02/2009 16:50	John P Hook	1
07055	Lead	SW-846 6010B	1	093241848010	11/30/2009 23:42	John W Yanzuk II	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	093241848010	11/23/2009 02:30	Mirit S Shenouda	1



Analysis Report

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Page 1 of 1

Sample Description: MW-80,MSD,111609 Filt Grab Water
2nd Semi-Annual 2009-Cincinnati Final Remedy

LLI Sample # WW 5841282
LLI Group # 1171654
OH

Project Name: Hooven Cincinnati Final Remedy

Collected: 11/16/2009 11:25 by JH

Account Number: 11494

Submitted: 11/18/2009 09:00

Chevron

Reported: 12/03/2009 at 07:22

5000 State Route 128

Discard: 02/02/2010

HOOVEN OH 45033

HOF80 SDG#: HVQ32-10MSD

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
Metals Dissolved					
07035	Arsenic	7440-38-2	mg/l 0.200	mg/l 0.0072	1
07055	Lead	7439-92-1	0.154	0.0069	1

General Sample Comments

This sample was field filtered for metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07035	Arsenic	SW-846 6010B	1	093241848010	12/02/2009 16:53	John P Hook	1
07055	Lead	SW-846 6010B	1	093241848010	11/30/2009 23:45	John W Yanzuk II	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	093241848010	11/23/2009 02:30	Mirit S Shenouda	1



Analysis Report

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Page 1 of 1

Sample Description: MW-80,DUP,111609 Filt Grab Water
2nd Semi-Annual 2009-Cincinnati Final Remedy

LLI Sample # WW 5841283
LLI Group # 1171654
OH

Project Name: Hooven Cincinnati Final Remedy

Collected: 11/16/2009 11:25 by JH

Account Number: 11494

Submitted: 11/18/2009 09:00

Chevron

Reported: 12/03/2009 at 07:22

5000 State Route 128

Discard: 02/02/2010

HOOVEN OH 45033

HOF80 SDG#: HVQ32-10DUP

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
Metals Dissolved					
07035	Arsenic	7440-38-2	mg/l 0.0459	mg/l 0.0072	1
07055	Lead	7439-92-1	N.D.	0.0069	1

General Sample Comments

This sample was field filtered for metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07035	Arsenic	SW-846 6010B	1	093241848010	12/02/2009 16:47	John P Hook	1
07055	Lead	SW-846 6010B	1	093241848010	11/30/2009 23:38	John W Yanzuk II	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	093241848010	11/23/2009 02:30	Mirit S Shenouda	1



Analysis Report

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Page 1 of 1

Sample Description: MW-64,111609 Grab Water
2nd Semi-Annual 2009-Cincinnati Final Remedy

LLI Sample # WW 5841284
LLI Group # 1171654
OH

Project Name: Hooven Cincinnati Final Remedy

Collected: 11/16/2009 14:05 by JH

Account Number: 11494

Submitted: 11/18/2009 09:00

Chevron

Reported: 12/03/2009 at 07:22

5000 State Route 128

Discard: 02/02/2010

HOOVEN OH 45033

HOO64 SDG#: HVQ32-11

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles	SW-846 8260B		ug/l	ug/l	
07582	Benzene	71-43-2	0.8 J	0.5	1
07582	Chlorobenzene	108-90-7	N.D.	0.8	1
07582	Ethylbenzene	100-41-4	N.D.	0.8	1
07582	Toluene	108-88-3	1 J	0.7	1
07582	Xylene (Total)	1330-20-7	N.D.	0.8	1
GC Volatiles	SW-846 8015B		ug/l	ug/l	
01635	TPH-GRO water C6-C10	n.a.	610	20	1
GC Extractable TPH	SW-846 8015B		ug/l	ug/l	
08269	TPH-DRO water C10-C28	n.a.	890	31	1

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01163	GC/MS VOA Water Prep	SW-846 5030B	1	L093261AA	11/22/2009 23:26	Michael A Ziegler	1
07582	PPL + Xylene (total) by 8260	SW-846 8260B	1	L093261AA	11/22/2009 23:26	Michael A Ziegler	1
01146	GC VOA Water Prep	SW-846 5030B	1	09323A07A	11/19/2009 16:48	Martha L Seidel	1
01635	TPH-GRO water C6-C10	SW-846 8015B	1	09323A07A	11/19/2009 16:48	Martha L Seidel	1
07003	Extraction - DRO (Waters)	SW-846 3510C	1	093220020A	11/19/2009 09:15	Karen R Rettew	1
08269	TPH-DRO water C10-C28	SW-846 8015B	1	093220020A	11/21/2009 06:31	Diane V Do	1



Analysis Report

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Sample Description: MW-64,111609 Filtered Grab Water
2nd Semi-Annual 2009-Cincinnati Final Remedy

LLI Sample # WW 5841285
LLI Group # 1171654
OH

Project Name: Hooven Cincinnati Final Remedy

Collected: 11/16/2009 14:05 by JH

Account Number: 11494

Submitted: 11/18/2009 09:00

Chevron

Reported: 12/03/2009 at 07:22

5000 State Route 128

Discard: 02/02/2010

HOOVEN OH 45033

HOF64 SDG#: HVQ32-12

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
Metals Dissolved					
07035	Arsenic	7440-38-2	mg/l N.D.	mg/l 0.0072	1
07055	Lead	7439-92-1	N.D.	0.0069	1

General Sample Comments

This sample was field filtered for metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07035	Arsenic	SW-846 6010B	1	093241848010	12/01/2009 00:11	John W Yanzuk II	1
07055	Lead	SW-846 6010B	1	093241848010	12/01/2009 00:11	John W Yanzuk II	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	093241848010	11/23/2009 02:30	Mirit S Shenouda	1

Sample Description: Trip Blank, 111709 Water
2nd Semi-Annual 2009-Cincinnati Final Remedy

LLI Sample # WW 5841286
LLI Group # 1171654
OH

Project Name: Hooven Cincinnati Final Remedy

Collected: 11/17/2009 14:00

Account Number: 11494

Submitted: 11/18/2009 09:00

Chevron

Reported: 12/03/2009 at 07:22

5000 State Route 128

Discard: 02/02/2010

HOOVEN OH 45033

HOOTB SDG#: HVQ32-13TB*

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC/MS	Volatiles	SW-846 8260B	ug/l	ug/l	
07582	Benzene	71-43-2	N.D.	0.5	1
07582	Chlorobenzene	108-90-7	N.D.	0.8	1
07582	Ethylbenzene	100-41-4	N.D.	0.8	1
07582	Toluene	108-88-3	N.D.	0.7	1
07582	Xylene (Total)	1330-20-7	N.D.	0.8	1
GC	Volatiles	SW-846 8015B	ug/l	ug/l	
01635	TPH-GRO water C6-C10	n.a.	N.D.	20	1

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01163	GC/MS VOA Water Prep	SW-846 5030B	1	L093261AA	11/22/2009 23:48	Michael A Ziegler	1
07582	PPL + Xylene (total) by 8260	SW-846 8260B	1	L093261AA	11/22/2009 23:48	Michael A Ziegler	1
01146	GC VOA Water Prep	SW-846 5030B	1	09324A07A	11/20/2009 14:13	Matthew S Woods	1
01635	TPH-GRO water C6-C10	SW-846 8015B	1	09324A07A	11/20/2009 14:13	Matthew S Woods	1

Quality Control Summary

Client Name: Chevron

Group Number: 1171654

Reported: 12/03/09 at 07:22 AM

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank MDL	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: L093261AA	Sample number(s): 5841269,5841271,5841273,5841275,5841277-5841279,5841284,5841286							
Benzene	N.D.	0.5	ug/l	110		79-120		
Chlorobenzene	N.D.	0.8	ug/l	108		80-120		
Ethylbenzene	N.D.	0.8	ug/l	110		79-120		
Toluene	N.D.	0.7	ug/l	108		79-120		
Xylene (Total)	N.D.	0.8	ug/l	111		80-120		
Batch number: 09323A07A	Sample number(s): 5841277-5841279,5841284							
TPH-GRO water C6-C10	N.D.	20.	ug/l	91	91	75-135	0	30
Batch number: 09324A07A	Sample number(s): 5841286							
TPH-GRO water C6-C10	N.D.	20.	ug/l	91	100	75-135	10	30
Batch number: 093220020A	Sample number(s): 5841277-5841279,5841284							
TPH-DRO water C10-C28	59	J 32.	ug/l	73		56-122		
Batch number: 093241848010	Sample number(s): 5841270,5841272,5841274,5841276,5841280-5841283,5841285							
Arsenic	N.D.	0.0072	mg/l	105		89-115		
Lead	N.D.	0.0069	mg/l	102		80-120		

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: L093261AA	Sample number(s): 5841269,5841271,5841273,5841275,5841277-5841279,5841284,5841286 UNSPK: 5841277								
Benzene	100 (2)	55 (2)	80-126	4	30				
Chlorobenzene	107	86*	87-124	21	30				
Ethylbenzene	113	92	71-134	20	30				
Toluene	105	86	80-125	15	30				
Xylene (Total)	112	92	79-125	17	30				
Batch number: 09323A07A	Sample number(s): 5841277-5841279,5841284 UNSPK: 5841277								
TPH-GRO water C6-C10	73	55*	63-154	6	30				
Batch number: 09324A07A	Sample number(s): 5841286 UNSPK: P842487								
TPH-GRO water C6-C10	111		63-154						
Batch number: 093220020A	Sample number(s): 5841277-5841279,5841284 UNSPK: 5841277								

*- Outside of specification

(1) The result for one or both determinations was less than five times the LOQ.

(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron

Group Number: 1171654

Reported: 12/03/09 at 07:22 AM

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
TPH-DRO water C10-C28	218 (2)	224 (2)	19-173	0	20				
Batch number: 093241848010 Sample number(s): 5841270, 5841272, 5841274, 5841276, 5841280-5841283, 5841285 UNSPK: 5841280 BKG: 5841280									
Arsenic	102	103	75-125	1	20	0.0451	0.0459	2 (1)	20
Lead	102	103	75-125	1	20	N.D.	N.D.	0 (1)	20

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: PPL + Xylene (total) by 8260

Batch number: L093261AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
5841269	110	105	103	105
5841271	108	104	103	105
5841273	108	102	106	99
5841275	106	102	104	105
5841277	105	99	107	106
5841278	107	102	108	107
5841279	109	102	107	107
5841284	104	100	104	105
5841286	106	104	106	97
Blank	106	104	105	103
LCS	107	101	107	106
MS	107	102	108	107
MSD	109	102	107	107
Limits:	80-116	77-113	80-113	78-113

Analysis Name: TPH-GRO water C6-C10

Batch number: 09323A07A

	Trifluorotoluene-F
5841277	319*
5841278	338*
5841279	260*
5841284	178*
Blank	102
LCS	112
LCSD	110
MS	338*
MSD	260*
Limits:	63-135

Analysis Name: TPH-GRO water C6-C10

Batch number: 09324A07A

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron
Reported: 12/03/09 at 07:22 AM

Group Number: 1171654

Surrogate Quality Control

Trifluorotoluene-F

5841286	100
Blank	102
LCS	109
LCSD	112
MS	223*

Limits: 63-135

Analysis Name: TPH-DRO water C10-C28
Batch number: 093220020A
Orthoterphenyl

5841277	328*
5841278	469*
5841279	146*
5841284	84
Blank	94
LCS	89
MS	469*
MSD	146*

Limits: 54-127

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Analysis Request/ Environmental Services Chain of Custody



For Lancaster Laboratories use only

Acct. # 11494 Group# 1171654 Sample # 5841269-86 **COC #** 211752

Please print. Instructions on reverse side correspond with circled numbers.

Tempo = 119-2.10C

1 Client: <u>CHEMCON</u> Acct. #: <u>11494</u> Project Name/ #: <u>2ND SEMI ANNUAL 2009</u> PWSID # <u>MMTCU17000120</u> Project Manager: <u>DOUG LAM</u> P.O. #: _____ Sampler: <u>JOHN HALL</u> Quote #: _____ Name of state where samples were collected: <u>OHIO</u>				4 Matrix: _____ Total # of Containers: _____ <input type="checkbox"/> Possible Check if _____		5 Analyses Requested Preservation Codes										For Lab Use Only FSC: _____ SCR#: _____			
						VOCs PPL 8260 POCs DISSOLVED METALS TPH GLO TPH DRG										6 Preservation Codes H=HCl T=Thiosulfate N=HNO ₃ B=NaOH S=H ₂ SO ₄ O=Other			
2 Sample Identification				3 Date Collected Time Collected		Grab Composite		Soil Water Other		Remarks									
MW-17, 11/209				11-12-09 1000		X		X		SEE ATTACHED ANALYTE LIST									
BD-2, 11/209				11-12-09 —		X		X		SEE ATTACHED ANALYTE LIST									
MW-262, 11/209				11-12-09 1205		X		X		SEE ATTACHED ANALYTE LIST									
MW-482, 11/209				11-12-09 1315		X		X		SEE ATTACHED ANALYTE LIST									
MW-80, 11/609				11-16-09 1125		X		X		SEE ATTACHED ANALYTE LIST									
MW-80, MS/MSD, 11/609				11-16-09 1125		X		X		SEE ATTACHED ANALYTE LIST									
MW-64, 11/609				11-16-09 1405		X		X		SEE ATTACHED ANALYTE LIST									
TRIP BLANK, 11/709				11-17-09 1400		X		X		SEE ATTACHED ANALYTE LIST									
TRIP BLANK, 11/709				11-17-09 1400		X		X		SEE ATTACHED ANALYTE LIST									
7 Turnaround Time Requested (TAT) (please circle): <u>Normal</u> Rush (Rush TAT is subject to Lancaster Laboratories approval and surcharge.) Date results are needed: _____ Rush results requested by (please circle): Phone Fax <u>E-mail</u> Phone #: <u>513-353-1323</u> Fax #: <u>513 353 4664</u> E-mail address: <u>MMTCU@TTHK4260.COM</u>				Relinquished by: <u>Dale Barnett</u> Relinquished by: _____ Relinquished by: _____ Relinquished by: _____ Relinquished by: _____		Date Time <u>11-17-09 1415</u> _____ _____ _____ _____		Received by: _____ Received by: _____ Received by: _____ Received by: _____ Received by: <u>Kristin Ziegler</u>		Date Time _____ _____ _____ _____ <u>11-18-09 0900</u>									
8 Data Package Options (please circle if required) Type I (validation/NJ Reg) TX TRRP-13 Type II (Tier II) MA MCP CT RCP Type III (Reduced NJ) Site-specific QC (MS/MSD/Dup)? Yes No Type IV (CLP SOW) (If yes, indicate QC sample and submit triplicate volume.) Type VI (Raw Data Only) Internal COC Required? Yes / No _____				SDG Complete? Yes No															

Analytical Requests for Groundwater
Chevron Cincinnati Facility, Hoover, Ohio

Volatile Organics

Benzene
Chlorobenzene
Ethylbenzene
Toluene
Xylenes (total)

Dissolved Metals- field filtered

Arsenic
Lead

TPH

GRO
DRO

Monitored Natural Attenuation

Alkalinity
Calcium
Chemical Oxygen Demand
Chloride
Iron (II) and Iron (III)
Dissolved and Total Manganese
Methane
Nitrate Nitrogen
Nitrite Nitrogen
Ammonia Nitrogen
Total Kjeldahl Nitrogen
Potassium
Sodium
Sulfate
Sulfide
Total Organic Carbon

Environmental Sample Administration Receipt Documentation Log

Client/Project: Chevron (OH)

Shipping Container Sealed: YES NO

Date of Receipt: 11-18-09

Custody Seal Present * : YES NO

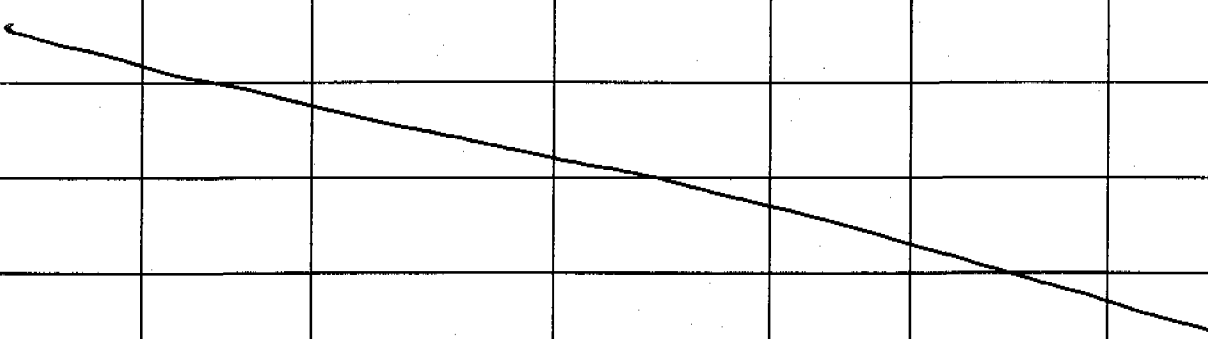
Time of Receipt: 0900

* Custody seal was intact unless otherwise noted in the discrepancy section

Source Code: 50-1

Package: Chilled Not Chilled

Unpacker Emp. No.: 2123

Temperature of Shipping Containers							
Cooler #	Thermometer ID	Temperature (°C)	Temp Bottle (TB) or Surface Temp (ST)	Wet Ice (WI) or Dry Ice (DI) or Ice Packs (IP)	Ice Present? Y/N	Loose (L) Bagged Ice (B) or NA	Comments
1	0429951	2.1°	TB	WI	Y	L	
2	↓	1.9°	↓	↓	↓	↓	
3							
4							
5							
6							

Number of Trip Blanks received NOT listed on chain of custody. 0

Paperwork Discrepancy/Unpacking Problems:

metals bottle for BD-2 sample says BD-1 on ID label

Sample Administration Internal Chain of Custody			
Name	Date	Time	Reason for Transfer
<u>Kristin Leigh</u>	<u>11-18-09</u>	<u>1435</u>	Unpacking
<u>Da Neslund</u>	<u>11/18/09</u>	<u>1440</u>	Place in Storage or <u>Entry</u>
			Entry
			Entry

Lancaster Laboratories Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

N.D.	none detected	BMQL	Below Minimum Quantitation Level
TNTC	Too Numerous To Count	MPN	Most Probable Number
IU	International Units	CP Units	cobalt-chloroplatinate units
umhos/cm	micromhos/cm	NTU	nephelometric turbidity units
C	degrees Celsius	F	degrees Fahrenheit
Cal	(diet) calories	lb.	pound(s)
meq	milliequivalents	kg	kilogram(s)
g	gram(s)	mg	milligram(s)
ug	microgram(s)	l	liter(s)
ml	milliliter(s)	ul	microliter(s)
m3	cubic meter(s)	fib >5 um/ml	fibers greater than 5 microns in length per ml
<	less than – The number following the sign is the <u>limit of quantitation</u> , the smallest amount of analyte which can be reliably determined using this specific test.		
>	greater than		
ppm	parts per million – One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter of gas per liter of gas.		
ppb	parts per billion		
Dry weight basis	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture.		

U.S. EPA data qualifiers:

Organic Qualifiers

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
C	Pesticide result confirmed by GC/MS
D	Compound quantitated on a diluted sample
E	Concentration exceeds the calibration range of the instrument
J	Estimated value
N	Presumptive evidence of a compound (TICs only)
P	Concentration difference between primary and confirmation columns >25%
U	Compound was not detected
X,Y,Z	Defined in case narrative

Inorganic Qualifiers

B	Value is <CRDL, but ≥IDL
E	Estimated due to interference
M	Duplicate injection precision not met
N	Spike amount not within control limits
S	Method of standard additions (MSA) used for calculation
U	Compound was not detected
W	Post digestion spike out of control limits
*	Duplicate analysis not within control limits
+	Correlation coefficient for MSA <0.995

Analytical test results for methods listed on the laboratories' accreditation scope meet all requirements of NELAC unless otherwise noted under the individual analysis.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

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